

consumer the source of ice is directly below the display segment 28. By positioning the dispensing tube 130 in such a manner, the consumer has a greater impression of receiving the ice which is currently on display within the display tube. The dispensing tube 130 may be PVC tubing or tygon flexible tubing.

As the discharge tubes 98, 100 will tend to accumulate undispensed ice therein, it is desirable that the discharge tubes 98, 100 be no longer than needed. It is also desirable that the dispensing tubes 130 be of as short of length as possible. The total distance of tubing between the gate plate 110 and the exit of ice from the dispensing tube 130 is important as a consumer will typically remove his finger from the dispensing button 126 once the beverage container 128 is judged to have received the desired amount of ice. Once the gate plate 110 has been closed, however, the dispensing tube 130 will still have a certain amount of ice in transit which will discharge into the beverage container 128.

During periods of heavy use, ice 34 will remain within the conduit 26 for only a short time. However, during periods of only occasional dispensing activity, if ice 34 were allowed to remain within the conduit, separated from the heavily insulated ice chest 24, it would eventually melt. For this reason, the drive motors 63, 65 are connected to an electronic controller with timer (not shown) which activates the sprocket wheel 32 at preset intervals for a preset period of time to advance the ice 34 through the conduit 26 to limit melting. Ice is returned to the ice chest 24 from the conduit 26 through an ice return tube 132. The ice return tube 132 is connected to the conduit horizontal segment 76 after the discharge segment 90 and display segments 28. An opening (not shown) is formed in the bottom of the conduit 26 above the ice return tube 132 such that all ice being conveyed by the cable paddle assembly 30 which passes the display segments 28 is shunted through the return tube 132 into the ice chest 24. The return tube 132 is removably connected to the ice chest cover 46 so that the return tube may be disconnected to permit opening of the cover 46. The conduit 26 has a cable return segment 77 which directs the cable paddle assembly 30 downwardly to the sprocket wheel 32.

As shown in FIG. 1, the dispenser 20 is provided with a plurality of beverage dispensers 134 which are supplied with cooled beverages stored at a remote location. To prevent spillage of beverages or melted ice, pans 136, shown in FIG. 5, are mounted to the housing beneath the beverage dispensers 134 and the ice dispensing tubes 130. These pans 136 empty into a collector 138 which is connected to a disposal line 140 which in turn extends from the ice dispenser 20 to a waste water disposal system.

Because the cable paddle assembly 30 has paddles 80 which are large with respect to the particles of ice conveyed by the dispenser 20, a variety of ice products may equally well be dispensed by the dispenser 20. For example, cube ice, scotsman's ice, turbo ice, or crushed ice may all be advantageously dispensed. Although the dispenser 20 has been illustrated as having an ice chest 24 for restocking with ice produced at a remote location, it should be noted that the dispenser 20 may be provided with an integral ice maker for restocking of the ice chest 24. It will be noted that the cable paddle assembly 30 allows the ice chest 24 to be placed beneath the dispensers and hence provides for convenient restocking.

It should also be noted that transparent display segments may be provided through other portions of the conduit travel. Furthermore, larger dispenser installations may accommodate multiple dispensing segments or plural conduits.

It is understood that the invention is not confined to the particular construction and arrangement of parts herein illustrated and described, but embraces all such modified forms thereof as come within the scope of the following claims.

We claim:

1. An ice dispenser comprising:

- a) a housing;
- b) an insulated ice chest contained within the housing and having portions defining an exit for ice from the chest;
- c) a conduit having portions defining an inlet opening adjacent the ice chest exit and adapted to receive ice from the chest therethrough;
- d) a continuous looped flexible cable extending through the conduit, the cable having a plurality of paddles fixed to the cable;
- e) a drive engaged with the cable paddle assembly to cause the paddles to move through the conduit, such that ice which is received within the conduit is engaged by the paddles and transported through the conduit;
- f) portions of the conduit defining at least one ice discharge opening at a location outside of the chest;
- g) a moveable gate positioned to selectably block the ice discharge opening or to withdraw from the ice discharge opening to permit the dispensing of ice therethrough; and
- h) an actuator connected to the gate to be operated by a user to dispense ice when desired.

2. The ice dispenser of claim 1, further comprising:

- a) a transparent conduit segment connected in line with the conduit, such that the paddles and engaged ice move through the transparent segment prior to being dispensed, such that the ice to be dispensed is visible to a user.

3. The ice dispenser of claim 2 wherein the transparent conduit segment comprises an inner transparent tube and an outer transparent tube surrounding the inner tube, wherein an insulative gap is defined between the inner and outer transparent tubes and a gas is disposed within the gap.

4. The ice-dispenser of claim 1 further comprising:

- a) portions of the conduit defining a return opening spaced after the discharge opening in the direction of paddle travel; and
- b) an ice return tube extending from the return opening to the ice chest, such that ice engaged by the paddles is received through the return opening and conveyed to the ice chest by the ice return tube as the cable paddle assembly is advanced through the conduit.

5. The ice dispenser of claim 1 further comprising a rotatable auger mounted within the chest and adapted to advance ice contained within the chest to the chest ice exit.

6. The ice dispenser of claim 5 further comprising a rotatable shaft mounted to rotate above the auger, the shaft having a plurality of radially extending protrusions adapted to break up agglomerations of ice contained within the chest.